Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) The probe as claimed in claim 6, wherein the probe further includes a biasing element such that a biasing force applied to the biasing element urges the tip and a sample towards each other with a magnitude greater than a restoring force arising from bending of the beam caused by a displacement of the tip as it probes a sample and wherein the biasing force is a substantially deflection-independent externally applied force.

2. (Withdrawn) The probe as claimed in claim 1, wherein the biasing element comprises a magnetic element responsive to an externally applied magnetic force.

3. (Withdrawn) The probe as claimed in claim 2, wherein the magnetic element is mounted on the force sensing member adjacent the tip.

4. (Previously presented) The probe as claimed in claim 1, wherein the biasing element comprises an electrically conductive member adapted for connection to one terminal of a power supply for applying a voltage potential between the probe and the sample.

5. (Previously presented) The probe as claimed in claim 4, wherein the biasing element is provided adjacent the tip.

6. (Currently amended) A probe for use in an atomic force microscope, the probe comprising a tip and a beam, the tip having a tip radius of 100 nm or less, the beam connected to the tip and having a first and second side and [[is]] coated on at least one of the first and second sides with a mechanical-energy dissipating polymer, wherein the polymer includes one or more substance selected from the group consisting of i) rubber with low cross-linking density, and ii) a block copolymer material with a majority component that is an amorphous rubber with a glass transition temperature below room temperature and a minority component that is an amorphous polymer with a glass transition temperature above room temperature.

7-11. (Cancelled)

12. (Previously presented) The probe according to claim 6, wherein the polymer is applied to the beam by solution casting.

13. (Previously presented) The probe according to claim 6, wherein a damping element is provided by a region of the beam having a spring constant less than 1 Nm^{-1}.

14. (Currently amended) An atomic force microscope for imaging a sample in accordance with an interaction force between the sample and a probe, the microscope comprising

a ~~driving means~~ driver arranged to provide relative scanning motion between the probe and the sample surface and capable of bringing the sample and probe into close proximity, sufficient for a detectable interaction to be established between them; and

a probe detection mechanism arranged to measure deflection and / or displacement of the probe;

wherein the microscope includes the probe of claim 6.

15. (Previously presented) The atomic force microscope as claimed in claim 14, further comprising a resonant oscillator mechanically coupled to either the probe or a sample stage for causing relative oscillatory movement between the probe and the sample, the relative oscillatory movement having an amplitude of at least one micrometer.

16. (Currently amended) An atomic force microscope comprising a driver; a probe having a tip, a substrate and a beam connecting the tip and the substrate; and a probe detection mechanism;

at least a portion of the beam coated with a polymer and the polymer includes a rubber having a low cross-linking density;

the driver operably connected to the substrate and arranged to provide relative scanning motion between the probe and a sample surface and capable of bringing the sample and probe into close proximity, sufficient for a detectable interaction to be established between them; and

[[a]] the probe detection mechanism arranged to measure at least one of deflection or displacement of the probe;

wherein the microscope includes a force generator arranged such that, in operation, a force is applied to either or both of the sample and the probe or between the sample and the probe, the force being directed so as to urge the probe towards the sample or vice versa.

17. (Previously presented) The microscope according to claim 16, wherein the force has a magnitude that is substantially independent of the degree of deflection of the probe.

18. (Previously presented) The microscope according to claim 17, wherein the force is greater than a restoring force provided by a deflection of the probe as it scans the surface of the sample.

19. (Previously presented) The microscope according to claim 18, wherein the probe has spring constant that is less than 1 Nm^{-1}.

20. (Withdrawn) The microscope according to claim 16, wherein the force generating means comprises a magnet and a magnetic element incorporated in the probe.

21. (Previously presented) The microscope according to claim 16, wherein the force generator comprises a circuit that applies an attractive biasing voltage between the probe tip and the sample.

22. (Withdrawn) The microscope according to claim 16, wherein the force generating means comprises a sample environment which encourages the formation

of a capillary neck between the probe and the sample, the capillary neck providing said applied force.

23. (Withdrawn) The microscope according to claim 22, wherein the force generator further comprises a hydrophilic surface on said probe.

24. (Cancelled)

25. (Withdrawn) The microscope according to claim 16, further comprising means for immersing the probe and sample in a liquid during operation of the microscope.

26-27. (Cancelled)

28. (Previously presented) The atomic force microscope as claimed in claim 16, further comprising a resonant oscillator mechanically coupled to either the probe or a sample stage for causing relative oscillatory movement between the probe and the sample with an oscillatory amplitude of at least one micrometer.

29. (Currently amended) A method of collecting image data from a scan area of a sample with nanometric features wherein the method comprises the steps of:

(a) moving a probe having a beam and a tip having a tip radius of 100 nm or less into close proximity with a sample in order to allow an interaction force to be established between probe and sample; the beam having a first and second side and is coated on at least one of the first and second sides with a polymer, the polymer

including one or more substance selected from the group consisting of i) rubber with low cross-linking density, and ii) a block copolymer material with a majority component that is an amorphous rubber with a glass transition temperature below room temperature and a minority component that is an amorphous polymer with a glass transition temperature above room temperature;

(b) causing a substantially deflection-independent force to be established between the sample and the tip such that the probe is urged to move towards the sample or vice versa;

(c) scanning either the probe across the surface of the sample or the sample beneath the probe whilst providing a relative motion between the probe and sample surface such that an arrangement of scan lines covers a scan area;

(d) measuring at least one of deflection or displacement of the probe; and

(e) processing measurements taken at step (d) in order to extract information relating to the nanometric structure of the sample.

30. (Cancelled)

31. (Previously presented) The method as claimed in claim 29, wherein the relative motion between the probe and the sample surface under step (c) is provided by a resonant oscillator.

32. (Withdrawn) A scanning probe microscope for writing information to a sample by means of an interaction between the sample and an AFM cantilever probe with low quality factor, the microscope comprising

a driving means arranged to provide relative scanning motion between the probe with the low quality factor and the sample surface and capable of bringing the sample and probe into close proximity; and

a probe writing mechanism arranged to vary intermittently, typically on a timescale shorter than one scan line, the strength of the interaction between the probe and the sample and so to change intermittently a property of the sample surface in the locality of the probe;

wherein the microscope includes force generating means arranged such that, in operation, a substantially deflection-independent force is applied to either or both of the sample and the probe or between the sample and the probe, the force being directed so as to urge the probe towards the sample or vice versa.

33. (Withdrawn) The microscope as claimed in claim 32, wherein the relative motion between the probe and the sample surface is provided by a resonant oscillator.

34. (Currently amended) An atomic force microscope comprising:

a probe having a substrate, a tip, and a beam connecting the substrate and the tip; the beam having a spring constant less than 1 Nm^{-1}, a top, and a bottom; the beam coated on at least one of the top or the bottom with a polymer and the polymer is one or more substance selected from the group consisting of i) rubber with low cross-linking density, and ii) a block copolymer material with a majority component that is an amorphous rubber with a glass transition temperature below room temperature and a minority component that is an amorphous polymer with a glass transition temperature above room temperature;

the atomic force microscope further comprising

a sample plate;

a driver operably connected to the substrate and the sample plate, the driver capable of bringing a sample on the sample plate and the tip into close proximity, the beam bent upwards from its rest position when the sample and the tip are in close proximity and exerting a bending force that is proportional to the spring constant of the beam and the the degree of beam bending ~~topography of the sample~~;

a force generator that applies a direct force to probe, the direct force exerted toward the sample and greater than the bending force; and

a probe detection mechanism operably connected to the probe and that measures at least one of deflection or displacement of the probe;

wherein a total restoring force that urges the sample and the probe tip together is proportional to the sum of the bending force and the direct force.

35. (Previously presented) The atomic force microscope of claim 34, wherein the spring constant is 0.01 to 0.06 Nm^{-1}.

36. (Previously presented) The atomic force microscope of claim 34, wherein the direct force is 1 to 100 nN.

37. (Previously presented) The atomic force microscope of claim 34, wherein the direct force is substantially independent of the topography of the sample.

38. (Previously presented) The atomic force microscope of claim 34, wherein the first side of the beam is distal to the sample and is coated with the polymer.

39. (Cancelled)

40. (Currently amended) The atomic force microscope of claim [[39]] 45, wherein the spring constant is 0.01 to 0.06 Nm^{-1}.

41. (Currently amended) The atomic force microscope of claim [[39]]45, wherein the at least a portion of the beam is a side of the beam distal to the sample.

42. (Currently amended) The atomic force microscope of claim [[39]]45 further comprising a force generator that applies a direct force to the probe, the direct force independent of the topography of the sample and exerted toward the sample; wherein a total restoring force that urges the sample and the probe tip together is proportional to the sum of the beam restoring force and the direct force.

43. (Currently amended) The atomic force microscope of claim [[43]]45, wherein the direct force is 1 to 100 nN.

44. (Cancelled)

45. (Currently amended) ~~The atomic force microscope of claim 39, wherein~~ An atomic force microscope comprising:

a probe having a substrate, a tip, and a beam connecting the substrate and the tip;

the beam having a polymer coated on at least a portion of the beam; the polymer being [[is]] a rubber with low cross-linking density; the beam having a spring constant less than 1 Nm^{-1};

a sample plate;

a driver operably connected to the substrate and the sample plate, the driver capable of bringing a sample on the sample plate and the tip into close proximity, the beam bent upwards from its rest position when the sample and the tip are in close proximity and exerting a beam restoring force that is proportional to the spring constant of the beam and the degree of beam bending;

a probe detection mechanism operably connected to the probe and that measures at least one of deflection or displacement of the probe.

46. (Currently amended) ~~The atomic force microscope of claim 39, wherein~~ An atomic force microscope comprising:

a probe having a substrate, a tip, and a beam connecting the substrate and the tip;

the beam having a polymer coated on at least a portion of the beam; the polymer [[is]] being a block copolymer material having a majority component that is an amorphous rubber with a glass transition temperature below room temperature and a minority component that is an amorphous polymer with a glass transition temperature above room temperature; the beam having a spring constant less than 1 Nm^{-1};

a sample plate;

a driver operably connected to the substrate and the sample plate, the driver capable of bringing a sample on the sample plate and the tip into close proximity, the beam bent upwards from its rest position when the sample and the tip are in

close proximity and exerting a beam restoring force that is proportional to the spring constant of the beam and the degree of beam bending;

a probe detection mechanism operably connected to the probe and that measures at least one of deflection or displacement of the probe.

47. (New) The atomic force microscope of claim 46, wherein the spring constant is 0.01 to 0.06 Nm^{-1}.

48. (New) The atomic force microscope of claim 46, wherein the at least a portion of the beam is a side of the beam distal to the sample.

49. (New) The atomic force microscope of claim 46 further comprising a force generator that applies a direct force to the probe, the direct force independent of the topography of the sample and exerted toward the sample; wherein a total restoring force that urges the sample and the probe tip together is proportional to the sum of the beam restoring force and the direct force.

50. (New) The atomic force microscope of claim 46, wherein the direct force is 1 to 100 nN.